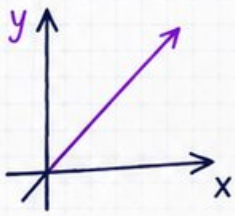
3 Minnesota MCA III

GRADE 7 MATH

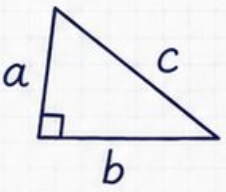
PRACTICE TESTS

- Standards Aligned
- Problem Solving
- For Comprehensive Assessment Programs



$y = mx + b$

$\frac{2}{3}x - \frac{4}{5} = \frac{1}{2}$



$3(x - 2) = 2x + 5$

3 PRINTED TESTS

2 ONLINE TESTS

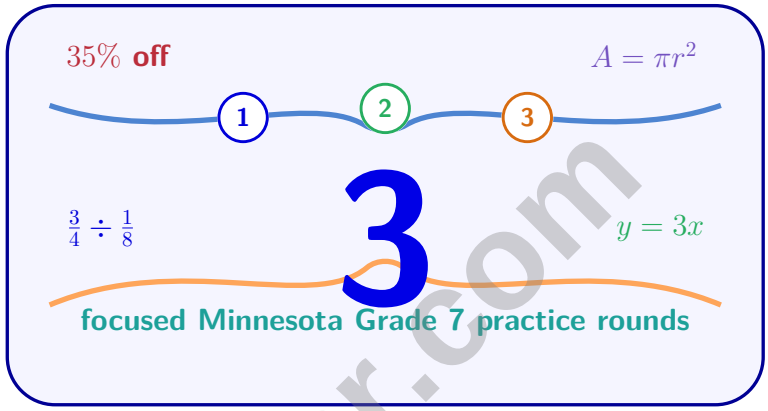
USE THESE TWO ADDITIONAL ONLINE PRACTICE TESTS

FOR EXTRA REVIEW AFTER THE PRINTED TESTS IN THIS BOOK.

- Build Confidence
- Strengthen Math Skills
- Detailed Answers & Explanations
- Improve Test Performance

3 Minnesota MCA III Grade 7 Math Practice Tests

Minnesota Practice for Grade 7 Math Confidence



Three complete 40-question Grade 7 MCA III practice rounds with proportional relationships, percents, rational numbers, expressions, equations, geometry, statistics, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari

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Welcome, Minnesota Grade 7 Problem Solver!

Three focused rounds for sharper MCA III math thinking

This book gives you three full Grade 7 MCA III math practice tests. Each round is built to help you notice structure, compare quantities, use proportional reasoning, handle rational numbers, and explain your thinking with care.

Your Minnesota Practice Promise

I will read every question carefully, choose a strategy that fits, write enough work to prove my answer, and use corrections as training for the next test.

How to Use This Book

A three-session plan for confident Grade 7 review

1. **Warm up with the review pages.** Notice the big ideas before starting the tests.
2. **Complete one test at a time.** Treat each 40-question round like a real practice session.
3. **Show your reasoning.** Jot a proportion, equation, diagram, number line, or quick estimate when it helps.
4. **Correct actively.** Rework missed items before reading the explanation.
5. **Choose the next target.** After each test, name one skill and one habit to improve.

Minnesota review rhythm: Work a test, score it, study your misses, then come back ready for the next round with one clear goal.

What Is Inside?

Three MCA III tests, 120 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Test 3	Expressions, equations, inequalities, scale drawings, geometry, data, probability, and multi-step problem solving.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Grade 7 success means recognizing which idea is being tested even when the next question changes format.

Table of Contents

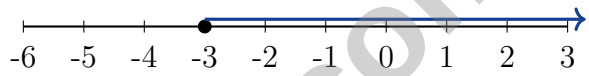
1) What is $2 \times (-3) \times (-2)$?

☐ A. -12
☐ B. -8
☐ C. 8
☐ D. 12

2) A jeweler estimated a necklace to weigh 8.2 grams, but it actually weighs 10 grams. What is the percent error?

☐ A. 15%
☐ B. 82%
☐ C. 22%
☐ D. 18%

3) Use the number line to determine the inequality. At -3 is a closed circle, and the solution extends right.



☐ A. $x > -3$
☐ B. $x < -3$
☐ C. $x \geq -3$
☐ D. $x \leq -3$

4) Expand and simplify: $3(2x + 4) + 2(x - 3)$

☐ A. $8x + 6$
☐ B. $6x + 4$
☐ C. $8x + 18$
☐ D. $5x + 1$

5) A garden is 15 feet long and 10 feet wide. A scale drawing uses 1 inch = 5 feet. What are the dimensions on the drawing?

☐ A. 1.5 inches × 1 inch
☐ B. 5 inches × 4 inches
☐ C. 3 inches × 2 inches
☐ D. 15 inches × 10 inches

6) Jordan invests \$2000 at a simple interest rate of 3.5% per year for 5 years. How much interest will he earn?

☐ A. \$70
☐ B. \$175
☐ C. \$350
☐ D. \$700

7) A simulation consists of rolling a die and flipping a coin, recording both results. This is the compound event. How many equally likely outcomes are in the sample space?

☐ A. 6
☐ B. 8
☐ C. 12
☐ D. 36

8)

Item	Original Price	Percent Increase
Video game	\$40	20%

By how much did the video game price increase?

☐ A. \$4
☐ B. \$20
☐ C. \$12
☐ D. \$8

9) A store marks up a product by \$5 on a cost of \$25. What is the selling price?

☐ A. \$35
☐ B. \$45
☐ C. \$20
☐ D. \$30

10) What is $7 + 9$?

☐ A. 2
☐ B. -2
☐ C. 63
☐ D. 16

11) If you have -5 dollars (meaning you owe 5 dollars) and you lose an additional 12 dollars, what is your new balance? Express your answer as an integer with the appropriate sign.

12) Simplify: $-2m - 5m + 3n + n$

☐ A. $-7m + 4n$
☐ B. $-3m + 4n$
☐ C. $-7m + 3n$
☐ D. $7m + 4n$

13) Factor the expression: $6x + 18$

☐ A. $6(x + 3)$
☐ B. $3(2x + 6)$
☐ C. $2(3x + 9)$
☐ D. $6(x + 18)$

14) A rectangular prism has length 8 m, width 5 m, and height 2 m. Find the surface area.

☐ A. 80 m^2
☐ B. 112 m^2
☐ C. 132 m^2
☐ D. 176 m^2

15) A temperature drops 1.2°C every 2 hours. How many degrees has it dropped after 10 hours?

☐ A. -2.4°C
☐ B. -6°C
☐ C. -12°C
☐ D. -8.8°C

1) If a bicycle costs \$120 and the sales tax is 8%, what is the tax amount?

☐ A. \$8
☐ B. \$14.40
☐ C. \$12
☐ D. \$9.60

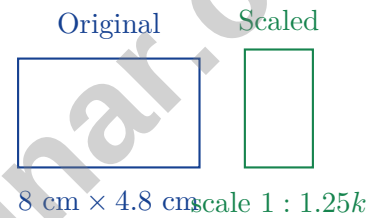
2) Which equation matches the description: "A number is multiplied by 5, then 12 is subtracted, and the result is 28"?

☐ A. $5x - 12 = 28$
☐ B. $5x + 12 = 28$
☐ C. $12 - 5x = 28$
☐ D. $\frac{x}{5} - 12 = 28$

3) Solve for x: $4(x - 3) = 12$

☐ A. $x = 0$
☐ B. $x = 3$
☐ C. $x = 6$
☐ D. $x = 9$

4)



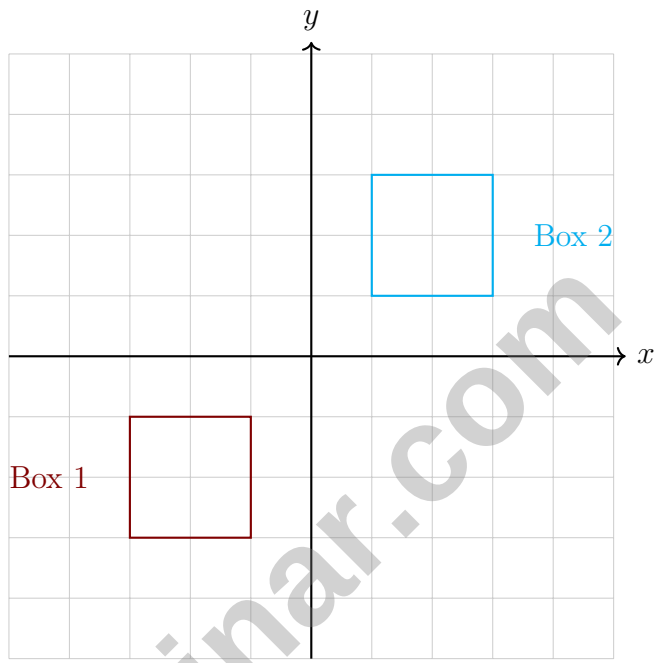
A scale drawing of a rectangular room is 8 cm × 4.8 cm. The drawing is enlarged proportionally so the new dimensions are 10 cm × 6 cm. If the original scale was 1 cm : 5 m, what is the scale of the enlarged drawing?

☐ A. 1 cm : 4 m
☐ B. 1 cm : 6.25 m
☐ C. 1 cm : 3.125 m
☐ D. 1 cm : 2.5 m

5) If angle x and angle y are complementary, and $x = 37°$, what is y?

☐ A. 53°
☐ B. 43°
☐ C. 37°
☐ D. 143°

6)



Box 1 is transformed to Box 2. A student claims this is a reflection over the line $y = x$. Is the student correct? Why or why not?

☐ A. Yes; the coordinates are swapped
☐ B. No; this is a 180° rotation plus translation
☐ C. Yes; dimensions are preserved
☐ D. No; reflection over $y = x$ would map $(-3, -3)$ to $(-3, -3)$, not $(1, 1)$

1) A quarter circle has a radius of 8 centimeters. What is its area? Use $\pi \approx 3.14$.

☐ A. 12.56 cm^2
☐ B. 25.12 cm^2
☐ C. 50.24 cm^2
☐ D. 100.48 cm^2

2) A card is drawn from a standard deck of 52 cards. What is $P(\text{King})$?

☐ A. $\frac{1}{52}$
☐ B. $\frac{1}{13}$
☐ C. $\frac{1}{4}$
☐ D. $\frac{1}{2}$

3) A jewelry store applies a 9% sales tax on all items. A customer buys a necklace for \$150. What is the final cost including tax?

☐ A. \$159
☐ B. \$168.50
☐ C. \$166.50
☐ D. \$163.50

4) A bank offers two savings products: Account 1 earns 7% compound interest on a \$1,200 deposit; Account 2 earns 8% compound interest on a \$1,100 deposit. After 1 year, which account has the greater balance and by how much?

☐ A. Account 1 by \$96
☐ B. Account 2 by \$96
☐ C. Account 1 by \$50
☐ D. Account 2 by \$20

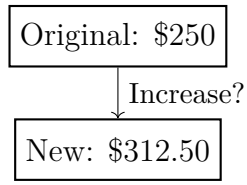
5)

Item	Price per Unit	Quantity Purchased
Apples	\$0.75	8
Bread	\$2.50	3
Milk	\$3.99	2
Eggs	\$4.20	1

What is the total cost of the grocery purchase?

☐ A. \$26.58
☐ B. \$28.37
☐ C. \$25.68
☐ D. \$32.45

6)



A diagram shows an original price of $250 increased to $312.50. What is the percent increase?

☐ A. 20%
☐ C. 30%
☐ B. 62.50%
☐ D. 25%

Minnesota MCA III Grade 7 Practice Test Answer Keys

How to use this section with a Grade 7 student:

1. check the answer first and circle any item that needs another look
2. retry the problem with fresh work before reading the explanation
3. write one short lesson learned from each missed or guessed item

A strong review routine turns every correction into a sharper plan for the next Minnesota MCA III practice test.

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

1) **Choice D is correct.** 7.NS.2 $2 \times (-3) = -6$. Then $(-6) \times (-2) = 12$. Two negatives (one in the (-3) and one in the (-2)) give a positive.

2) **Choice D is correct.** 7.RP.3 Percent error $= \frac{|8.2-10|}{10} \times 100\% = \frac{1.8}{10} \times 100\% = 18\%$.

3) **Choice C is correct.** 7.EE.4b Closed circle at -3 with a right arrow (extending to greater values) represents $x \geq -3$ (greater than or equal to -3).

4) **Choice A is correct.** 7.EE.1-7.EE.2 Expand: $6x + 12 + 2x - 6 = 8x + 6$. Combine like terms.

5) **Choice C is correct.** 7.RP.1-7.RP.3 Divide actual dimensions by scale: $15 \div 5 = 3$ inches; $10 \div 5 = 2$ inches.

6) **Choice C is correct.** 7.RP.3 $I = 2000 \times 0.035 \times 5 = \$350$. Convert 3.5% to 0.035.

7) **Choice C is correct.** 7.SP.5-7.SP.8 Die outcomes: 6 (rolling $1, 2, 3, 4, 5, 6$). Coin outcomes: 2 (heads or tails). Total compound outcomes: $6 \times 2 = 12$ distinct pairs (e.g., H1, H2, H3, ..., H6, T1, T2, ..., T6).

8) **Choice D is correct.** 7.RP.3 A 20% increase of \$40 is $0.20 \times 40 = 8$ dollars.

9) **Choice D is correct.** 7.RP.3 Selling price = cost + markup $= 25 + 5 = \$30$. (The markup represents \$5/\$25 = 20% of the cost.)

10) **Choice D is correct.** 7.NS.1b Both numbers are positive, so add them directly: $7 + 9 = 16$.

11) **The correct answer is -17 .** 7.NS.1-7.NS.3 The new balance is $-5 - 12 = -17$. You now owe 17 dollars.

12) **Choice A is correct.** 7.EE.1 Combine like terms: $(-2m - 5m) + (3n + n) = -7m + 4n$.

13) **Choice A is correct.** 7.EE.1-7.EE.2 The GCF of 6 and 18 is 6. $6x + 18 = 6(x + 3)$.

14) **Choice C is correct.** 7.G.4-7.G.6 $SA = 2(8 \cdot 5 + 8 \cdot 2 + 5 \cdot 2) = 2(40 + 16 + 10) = 2(66) = 132$ m^2.

15) **Choice B is correct.** 7.NS.1-7.NS.3 In 10 hours, there are $10 \div 2 = 5$ periods of 2 hours. Total drop: $1.2 \times 5 = 6°$C, or $-6°$C.

16) **The correct answer is $\frac{4}{3}$.** 7.RP.1-7.RP.3 If $\frac{1}{2}$ job takes $\frac{2}{3}$ hour, then 1 full job takes $\frac{2}{3} \times 2 = \frac{4}{3}$ hours.

17) **Choice B is correct.** 7.NS.1-7.NS.3 Volume $= \frac{7}{8} - \frac{1}{8} + \frac{3}{8} = \frac{7-1+3}{8} = \frac{9}{8}$ liters.

18) **Choice A is correct.** 7.EE.1-7.EE.2 Substitute: $5(-2) - 2(4) = -10 - 8 = -18$.

19) **The correct answer is 1.5 .** 7.RP.1-7.RP.3 The unit price is \$1.50 per apple, so the constant of proportionality is 1.5.

20) **The correct answer is A,C.** 7.SP.1-7.SP.4 Bread: $0.35 \times 400 = 140$ items, so A is correct. Pastries and cakes together make 200 items, not 50, so B is false. Other: $0.15 \times 400 = 60$ items, so C is correct. Pastries (28%) plus other (15%) equals 43%, not 45%.

21) **Choice C is correct.** 7.EE.3-7.EE.4 Add 9: $4x = 8$. Divide by 4: $x = 2$. Check: $4(2) - 9 = 8 - 9 = -1$ ✓. Reasonable: positive result minus larger value gives negative.

22) **Choice A is correct.** 7.EE.4b "A number decreased by 7" is $n - 7$; "is less than or equal to 12" is ≤ 12. (Note: D is the simplified solution but A is the direct translation.)

23) **Choice C is correct.** 7.G.1-7.G.5 Set up ratio: $\frac{2 \text{ cm}}{1 \text{ km}} = \frac{5 \text{ cm}}{x}$. Cross-multiply: $2x = 5$, so $x = 2.5$ km.

24) **Choice B is correct.** 7.G.1-7.G.5 A plane can intersect a rectangular prism in a triangle if it passes through three points not on the same face. A common example is a plane through one vertex and two points on opposite edges.

25) **Choice C is correct.** 7.G.4-7.G.6 $V = \pi r^2 h \Rightarrow 376 = 3.14 \times 16 \times h \Rightarrow h = \frac{376}{50.24} = 7.5$ cm.

26) **Choice A is correct.** 7.SP.1-7.SP.4 Evening hours systematically exclude people who work evening shifts or are otherwise unavailable at that time, creating a biased sample that overrepresents people available in the evening.

27) **Choice D is correct.** 7.RP.1-7.RP.3 Multiply the monthly rate by the number of months. The equation is $C = 12m$.

28) **Choice D is correct.** 7.RP.1-7.RP.3 For $y = 4x$: when $x = 1$, $y = 4 \times 1 = 4$. So $(1, 4)$ lies on the line. This is the unit-rate point where the constant of proportionality $k = 4$ is visually represented. The other points do not satisfy $y = 4x$.

29) **Choice D is correct.** 7.RP.3 Set up the proportion: $\frac{3}{4} = \frac{p}{100}$. Cross-multiply: $4p = 300$, so $p = 75\%$.

30) **Choice D is correct.** 7.RP.3 Surplus = \$1,500 − \$1,200 = \$300. To savings = 60% × \$300 = \$180.

Author's Note

Your Future Math Self

Hi, Future Algebra Thinker!

◇ Grade 7 practice prepares you for the next math steps. Expressions, equations, proportional relationships, and graphs are all part of that bridge. This short, concentrated book gave you three focused Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

⋆ **Remember this:** Every time you solved for an unknown or explained a relationship, you were building skills that future math will use again. ⋆

Bridge Skills

- **Use Variables:** Let letters stand for unknown values.
- **Balance Equations:** Keep both sides fair.
- **Read Graphs:** Connect points to meaning.
- **Compare Rates:** Look for constant relationships.

Grade 7 test-day tip: When you see a variable, say what it represents. That keeps algebra connected to the problem.

If you want to share something or ask a question, please email me at jay@testinar.com.

Jay Daie

Your Algebra Bridge Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **3** full-length Math practice tests and **2** online tests to help Grade 7 students build confidence, strengthen skills, and excel on standardized assessments.

Each practice test is carefully crafted to reflect the latest standards and includes a variety of question types, realistic test conditions, and detailed answer explanations.

Perfect for classroom use, homework, test preparation, and extra practice at home.

THIS BOOK INCLUDES:

- **3** Full-Length Printed Tests
- **2** Online Practice Tests
- Detailed Answers & Explanations

MORE PRACTICE. GREATER RESULTS.

Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

WHAT YOU'LL GAIN

Build Confidence
Practice regularly to feel prepared and test-ready.

Strengthen Math Skills
Develop key math concepts and problem solving abilities.

Detailed Answers & Explanations
Learn from clear explanations and step-by-step solutions.

Improve Test Performance
Apply your knowledge and achieve your best score!

TOPICS COVERED

- Ratios & Proportions
- The Number System
- Expressions & Equations
- Geometry
- Percents & Decimals
- Statistics & Probability
- Data Analysis
- Measurement & Conversions
- Algebraic Thinking
- And More!

2 ONLINE TESTS

Use these two additional online practice tests for extra review after the printed tests in this book.

2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

Don't lose it—your extra practice and success start here!

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PRACTICE REGULARLY | STAY FOCUSED | SOLVE CONFIDENTLY | SUCCEED BRIGHTLY